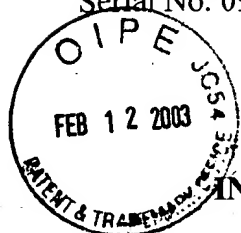In re Appln. of Arora et al.
Serial No. 09/641,556

PATENT
Attorney Docket No. 212634

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Arora et al.

Application No. 09/641,556

Filed: August 17, 2000

For: PATTERN- AND MODEL-BASED POWER
        LINE MONITORING

Art Unit: 2121

Examiner: Thomas K. Pham

PENDING CLAIMS AFTER ENTRY OF AMENDMENT A

1.   Canceled.

2.   Canceled.

3.   Canceled.

4.   Canceled.

5.   Canceled.

6.   Canceled.

7.   Canceled.

8.   Canceled.

9.   Canceled.

10.   Canceled.

11.   An architecture for an automation system, the automation system used to remotely control and monitor power consuming devices drawing power from a power line in a building, the architecture comprising:

a look-up service maintaining a database of (1) the power consuming devices including their attributes of device type and physical location, and (2) device objects corresponding to the power consuming devices including a name for each device object mapped to at least one address;

a store managing information for refreshing the power consuming devices and the device objects;

a publication/subscription eventing component enabling subscriptions to events related to changes in the refresh information managed by the store; and,

a power line monitor detecting super-imposed transmissions from the power consuming devices on the power line, which signal problems with the power consuming devices.

12.   The architecture of claim 11, wherein the power line monitor uses pattern-based detection for detecting unacceptable power line activity.

13.   The architecture of claim 12, wherein the power line monitor matches power line patterns against unacceptable power line patterns stored in a pattern database.

14.   The architecture of claim 11, wherein the power line monitor uses model-based detection for detecting acceptable power line activity.

15.   The architecture of claim 14, wherein the power line monitor tests power line patterns against a pattern model of acceptable power line patterns.

16.   A system for detecting device failures in an automation system for remotely controlling a power-consuming device in a building, the system comprising:

a power line providing power to the power consuming device;

a computing device in communication with the power consuming device by way of the power line and receiving from the power consuming device a first set of signals superimposed on the power line, and transmitting to the power consuming device a second set of signals superimposed on the power line; and

a power line monitor that detects a pattern in the first and second sets of superimposed signals and performs a predetermined action when the pattern indicates an anomaly in the automation system.

17.   In an automation system for remotely controlling a power consuming device in a building, the system including: a power line providing power to the power consuming device; and a computing device in communication with the power consuming device by way of the power line and receiving from the power consuming device a first set of signals superimposed on the power line, and transmitting to the power consuming device a second set of signals superimposed on the power line, a method comprising:

detecting a pattern in the first and second sets of superimposed signals; and

performing a predetermined action when the pattern indicates an anomaly in the automation system.

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